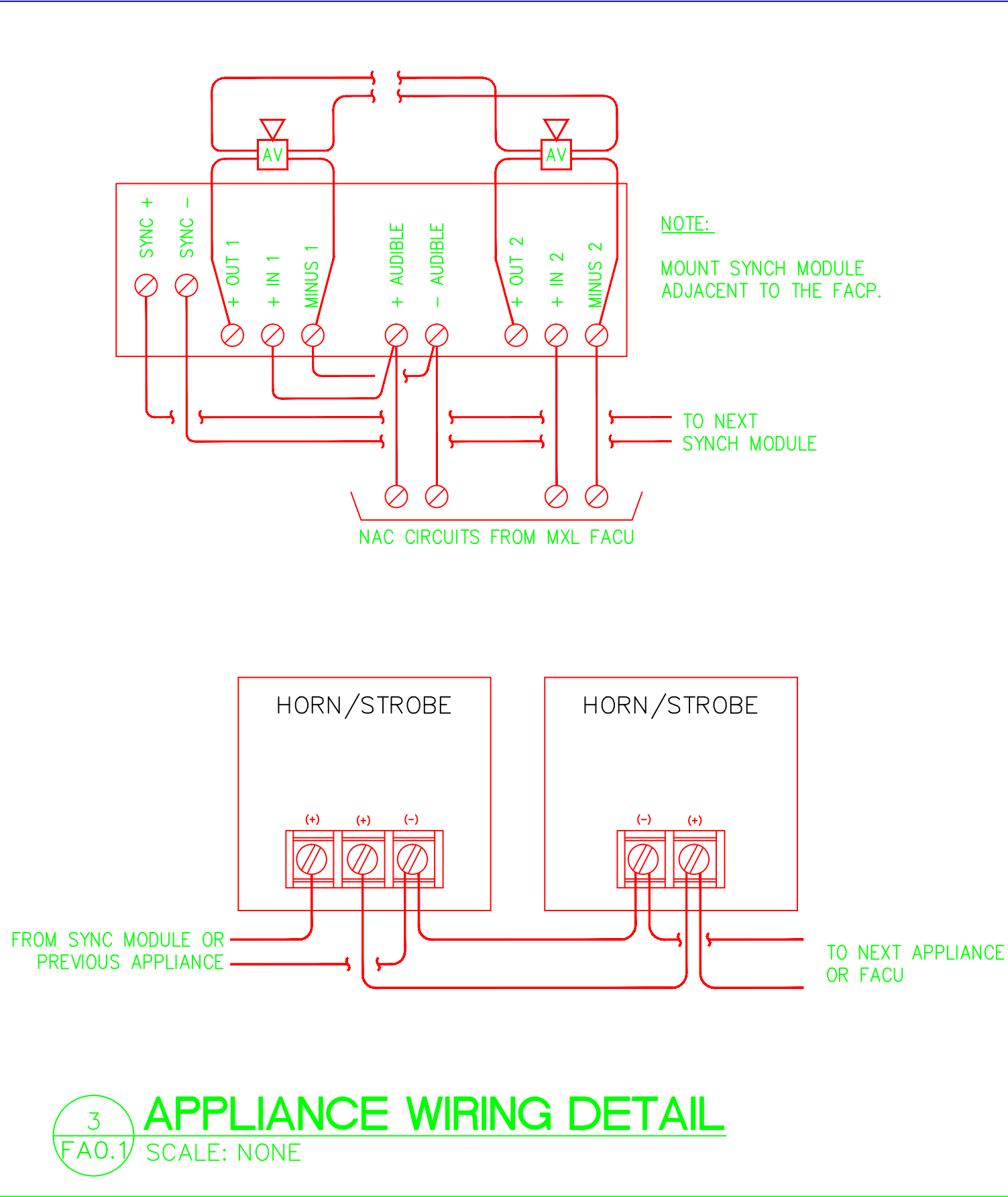


1
FAO.1
RISER DIAGRAMS
SCALE: NONE



3
FAO.1
APPLIANCE WIRING DETAIL
SCALE: NONE

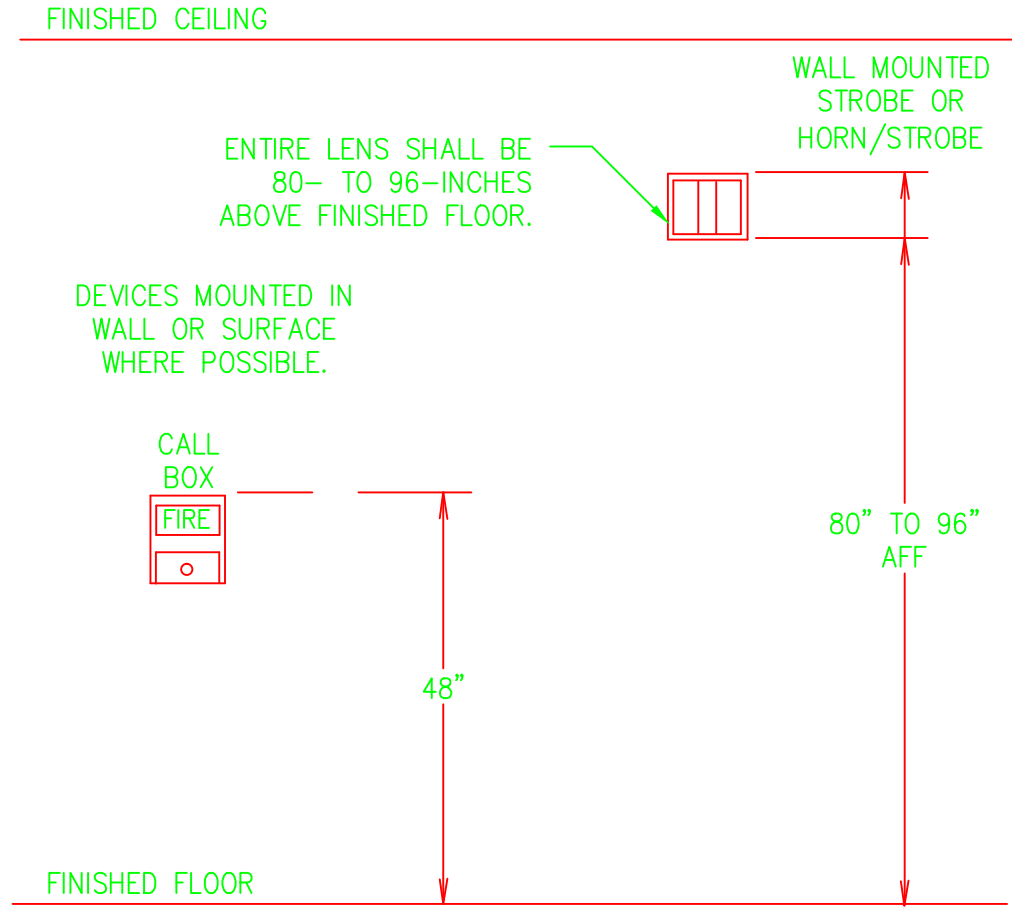
GENERAL NOTES:

- IN GENERAL, WORK SHALL INCLUDE, BUT NOT BE LIMITED TO THE DETAILED DESIGN, FABRICATION, PROCUREMENT, AND INSTALLATION OF THE COMPLETE FIRE PROTECTION SYSTEMS ADDITIONS AND MODIFICATIONS AS INDICATED ON THE CONTRACT DRAWINGS, INCLUDING:
 - ALL PENETRATIONS THROUGH WALLS, FLOORS AND CEILINGS NECESSARY FOR THE INSTALLATION OF THE FIRE PROTECTION SYSTEMS INCLUDING THE INSTALLATION OF APPROVED FIRESTOP ASSEMBLIES NECESSARY TO MAINTAIN THE DESIGNED FIRE RESISTANCE RATING OF THE WALL, CEILING, OR FLOOR ASSEMBLY.
 - CONNECTIONS TO THE EXISTING FIRE ALARM SYSTEM AS INDICATED.
 - SYSTEMS AND DEVICE TESTING.
 - ALL NECESSARY PERMITS.
- THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND IMPLEMENTING ALL SAFETY PROGRAMS AND PROCEDURES FOR THIS PROJECT AND SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL SAFETY AND HEALTH REGULATIONS.
- THE CONTRACT DRAWINGS ARE DIAGRAMMATIC ONLY. THE SUBCONTRACTOR SHALL DETERMINE THE ACTUAL MEASUREMENTS AND MAKE ANY AND ALL SUCH LENGTH AND OFFSET ADJUSTMENTS AS MAY BE NECESSARY TO COMPLETE THE INSTALLATION AT NO CHANGE IN THE CONTRACT PRICE. THE DRAWINGS ARE NOT INTENDED TO RELIEVE THE SUBCONTRACTOR OF ANY RESPONSIBILITY FOR AVOIDING CONFLICTS OR OBSTRUCTIONS, OR FOR INSTALLING THE NUMBER OF SPRINKLERS AND SUPPLY PIPING AS REQUIRED TO PROVIDE COMPLETE PROTECTION OF THE DESIGNATED AREAS IN ACCORDANCE WITH THE REQUIREMENTS OF THE REFERENCED STANDARDS AND THESE SPECIFICATIONS. WRITTEN APPROVAL SHALL BE OBTAINED FROM THE UNIVERSITY'S REPRESENTATIVE PRIOR TO MAKING ANY MAJOR DEVIATIONS FROM THE ARRANGEMENT AND LAYOUT SHOWN ON THE DRAWINGS.
- ALL EQUIPMENT SHALL BE NEW, AND APPROVED AND/OR LISTED BY UNDERWRITERS' LABORATORIES OR FACTORY MUTUAL.
- SYSTEM, EQUIPMENT, INSTALLATION, AND MATERIALS AND METHODS USED SHALL COMPLY WITH THE FOLLOWING:
 - THE REQUIREMENTS OF THE LAWRENCE BERKELEY NATIONAL LABORATORY.
 - NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 72 NATIONAL FIRE ALARM CODE CURRENT EDITION.
 - CALIFORNIA BUILDING AND FIRE CODES.
 - MANUFACTURER'S RECOMMENDATIONS AND GUIDELINES.
- ALL NEW CONDUIT SHALL BE MINIMUM $\frac{3}{4}$ INCH DIAMETER.

FIRE ALARM SYSTEM FUNCTION CHART

SYSTEM EVENT	RESPONSE				
	ANNUNCIATE AT FACU	FIRE SIGNAL TO RECEIVER	TROUBLE SIGNAL TO LENL RECEIVER	SUPERVISORY SIGNAL TO LENL RECEIVER	OPERATE NOTIFICATION APPLIANCES
FIRE CALL BOX	●	●			●
FIRE SPRINKLER WATERFLOW SWITCH	●	●			●
FIRE SPRINKLER VALVE SUPERVISORY SWITCH	●			●	
AC POWER FAILURE	●		●		
SYSTEM FAULT	●				

NOTE: THIS FUNCTION CHART IDENTIFIES ONLY THOSE ACTIONS ASSOCIATED WITH THIS PROJECT AND THE NEW/RELOCATED FIRE ALARM INITIATING DEVICES. THE NECESSARY AND REQUIRED FUNCTIONS FOR OTHER ALARM INITIATING DEVICES ASSOCIATED WITH THE EXISTING FIRE ALARM CONTROL UNIT ARE NOT SHOWN.



2
FAO.1
TYPICAL APPLIANCE/DEVICE DETAIL
SCALE: NONE

NOTIFICATION APPLIANCE CIRCUIT POWER REQUIREMENTS

DESCRIPTION	CURRENT PER APPLIANCE	# OF APPLIANCES	
		CIRCUIT AV1	
COOPER NOTIFICATION EXCEDER SERIES STROBE 15 cd	0.057	0	
COOPER NOTIFICATION EXCEDER SERIES HORN/STROBE 15 cd	0.073	0	
COOPER NOTIFICATION EXCEDER SERIES STROBE 30 cd	0.085	0	
COOPER NOTIFICATION EXCEDER SERIES HORN/STROBE 30 cd	0.087	0	
COOPER NOTIFICATION EXCEDER SERIES STROBE 75 cd	0.135	0	
COOPER NOTIFICATION EXCEDER SERIES HORN/STROBE 75 cd	0.139	0	
COOPER NOTIFICATION EXCEDER SERIES STROBE 110 cd	0.182	2	
COOPER NOTIFICATION EXCEDER SERIES HORN/STROBE 110 cd	0.186	0	
TOTAL CIRCUIT CURRENT		0.364	

VOLTAGE DROP CALCULATIONS

$\{(I) (D) (21.6)\} / CM$
WHERE: I = CIRCUIT POWER LOAD 21.6 = CONSTANT
D = CONDUCTOR ONE WAY DISTANCE CM = CROSS SECTION AREA OF WIRE (4110 FOR AWG#14)

NAC AV1
{0.364 AMP} (400 FT) (21.64)/4110 VOLTAGE DROP: 0.767 VOLTS AVAILABLE VOLTAGE: 23.233 VOLTS

THE CIRCUIT'S AVAILABLE VOLTAGE IS ABOVE THE MINIMUM LISTED VOLTAGE FOR THE APPLIANCES.

4
FAO.1
VOLTAGE DROP CALCULATIONS
SCALE: NONE

LEGEND

- NEW WALL MOUNTED HORN/STROBE, CANELA AS NOTED
- NEW FIRE SPRINKLER WATERFLOW SWITCH
- NEW VALVE POSITION SUPERVISORY SWITCH
- EXISTING FIRE SPRINKLER WATERFLOW SWITCH
- EXISTING VALVE POSITION SUPERVISORY SWITCH
- EXISTING MANUAL FIRE CALL BOX
- EXISTING FIRE ALARM TERMINAL CABINET
- NEW $\frac{3}{4}$ INCH CONDUIT, CONTAINING IDENTIFIED CIRCUITS
- EXISTING CONDUIT

BUILDING 45 FIRE STATION REPLACEMENT

FIRE ALARM – NOTES & DETAILS

UNIVERSITY OF CALIFORNIA
LAWRENCE BERKELEY NATIONAL LABORATORY
FACILITIES DIVISION